

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: LUDWIG, L. et al.  
Serial No: 08/131,523  
Filed: October 1, 1993  
For: MULTIMEDIA COLLABORATION SYSTEM

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Art Unit: 2317

Assistant Commissioner of Patents  
Application Processing Division  
Washington, D.C. 20231

APR 24 1997

OFFICIAL

## RESPONSE TRANSMITTAL

Transmitted herewith is an Amendment in Response to the Final Office Action dated April 15, 1997.

This Response is being filed within 3 months of the Office Action. Accordingly, no extension fee is required. Also, no additional claim fees are required.

The Commissioner is authorized to charge any underpayment of the following fees associated with this communication, including any necessary fees for extension of time, or credit any overpayment to Deposit Account No. 03-3117:

- (i) Any filing fees under 37 CFR 1.16 including fees for extra claims not previously paid for;
- (ii) Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

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## Certificate of Facsimile Mailing

I hereby certify that this correspondence is being transmitted by facsimile addressed to Examiner Dung Dinh, Art Unit 2317, Facsimile Number (703) 308-5359, at United States Patent and Trademark office, Washington, D.C. 20231, at 6:38 p.m. on April 24, 1997.

Date: April 24, 1997

By: 

<sup>6</sup>  
J<sup>1</sup> ~~66~~. (Four Times Amended) The teleconferencing system of claim <sup>1</sup>~~207~~, [further comprising:

(a) at least one signal router] wherein the system is configured to optimize the routing of AV signals between said locations.

<sup>7</sup>  
67. (Once Amended) The teleconferencing system of claim <sup>6</sup>~~66~~, wherein [said router optimizes said] the signal routing is optimized based on either the actual or the anticipated state of said AV path.

J<sup>2</sup> <sup>8</sup>  
71. (Twice Amended) The teleconferencing system of claim [208] <sup>1</sup>~~207~~, wherein said AV path includes at least one trunk associated with at least one codec.

J<sup>3</sup> <sup>13</sup>  
187. (Thrice Amended) The teleconferencing system of claim <sup>12</sup>~~57~~, further comprising:  
(a) a data network providing a data path for carrying data signals among the workstations; and  
(b) a data conference manager [for managing] configured to manage a data conference during which shared data is displayed at the workstations of a plurality of [the] participants.

J<sup>4</sup> <sup>19</sup>  
192. (Once Amended) The teleconferencing system of claim [191] <sup>17</sup>~~190~~, further comprising an echo canceller to reduce echo during the reproduction of said audio sum.

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195. (Thrice Amended) The teleconferencing system of claim<sup>22</sup> ~~64~~, wherein the AV reproduction capabilities of at least the workstation of the first participant includes a plurality of speakers, the system further comprising:

5 (a) an audio control configured to control the reproduction of said audio sum at said first participant's workstation such that the composition of the audio originating from each of the second and third participants reproduced at each speaker is dependent on a position of the images of the second and third participants in said reproduced mosaic image.

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205. (Twice Amended) The method of conducting a teleconference of claim <sup>34</sup> ~~197~~, further comprising the steps of:

56 (a) receiving captured audio of the first and second participants and a third participant;

(b) combining the received audio of only the second and third participants into an audio sum; and

(c) reproducing the audio sum at the workstation associated with the first participant.

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207. (Once Amended) A teleconferencing system for conducting a teleconference among a plurality of participants comprising:

7 (a) first, second and third locations;

(b) at least one workstation at each of the first, second and third locations, each workstation including audio and video capture and reproduction capabilities arranged to capture and reproduce participant video images and spoken audio;

- 57
- (c) a codec associated with each of the first, second and third locations;
  - (d) an AV path linking the three locations;
  - (e) a network switch associated with at least one of the first and second locations and designed to route codec compressed AV signals representing captured participant video images and spoken audio along the AV path; [and]
  - (f) a switch in communication with the third location to route compressed AV signals, destined for the second location, from the first location to the second location without the compressed AV signals being decompressed or reproduced at said third location; and
  - (g) a Local Area Network switch functionally positioned between the workstation at and the codec associated with one of the first and second locations to route signals to the workstation at that location.

wherein the location at which the Local Area Network switch is positioned is a multi-participant location having a plurality of workstations, and

wherein the Local Area Network switch is arranged to receive signals from the codec at that location and route the received signals to a destination workstation of the workstation plurality.

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[ Delete claims 208 and 209.

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210. (Once Amended) The teleconferencing system of claim [209] <sup>1</sup>207, wherein

- 5<sup>8</sup>
- (a) the number of workstations at each multi-participant location is greater than the number of any one resource in the group consisting of codecs and network switches associated with that location, and
- (b) each of the workstations has access to any of the resources.

11  
212. (Once Amended) The teleconferencing system of claim [211] ~~207~~<sup>1</sup>; further comprising:

- 5<sup>9</sup>
- (a) a participant locator that responds to a participant logging into a workstation by associating that participant with each such workstation logged into, thereby enabling the routing of a videoconference call, for that participant, to the workstation at which that participant is logged in.

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213. (Once Amended) The teleconferencing system of claim [62] ~~207~~<sup>1</sup>, wherein video images are reproduced at a workstation as full-motion video.

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215. (Once Amended) The method of conducting a teleconference of claim [196] ~~218~~<sup>28</sup>; further comprising the steps of:

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(a) associating a participant with each workstation logged into by the participant; and

(b) routing a call to initiate a videoconference with such participant to the workstation at which that participant is logged in.

J<sup>10</sup> <sup>42</sup>  
~~216~~ (Once Amended) The method of claim [196] <sup>28</sup>~~218~~, wherein video images are reproduced at a workstation as full-motion video.

J<sup>11</sup> <sup>28</sup>  
~~218~~ (Once Amended) A method of conducting a teleconference among at least one participant at each of first and second locations, each location having at least one associated workstation with audio and video capture and reproduction capabilities and a codec and one of the locations having a Local Area Network switch, the method comprising the steps of:

- (a) linking the first and second locations with a third location including at least one workstation with audio and video reproduction capabilities and at least one codec;
- (b) capturing video images and spoken audio of a participant at the first location;
- (c) compressing signals representing the captured video and audio at the first location;
- (d) routing compressed signals, destined for the second location, to the third location;
- (e) receiving the routed signals at the third location and routing the received signals from the third to the second location without decompressing the received signals or reproducing the audio or video represented by the received signals at the workstation at the third location;
- (f) receiving the signals from the third location and reproducing the audio and video, captured at the first location, at the second location; and
- (g) using the Local Area Network switch to route signals representing captured participant audio and video between the workstation and the codec at the location having the switch.

☐ [Add the following claims:]

<sup>27</sup>  
~~219~~ The teleconferencing system of claim <sup>20</sup>~~62~~, further comprising a close-up selector for selecting the image of one of the participants in said mosaic image and replacing said mosaic image with the image of said selected image.

<sup>38</sup>  
~~220~~ The method of conducting a teleconference of claim <sup>34</sup>~~197~~, further comprising the steps of:

(a) selecting the image of one of the participants in the mosaic image; and

(b) replacing the mosaic image with the image of the selected image.

<sup>40</sup>  
~~221~~ The method of conducting a teleconference of claim <sup>39</sup>~~199~~, wherein the reproduced mosaic image includes images of the first, second and third participants, the method further comprising the step of:

(a) reproducing the audio sum at the first participant's workstation such that the composition of the reproduced audio is dependent on a position of the images of participants in the reproduced mosaic image.

# REMARKS

This amendment is made in response to the Final Office Action dated April 15, 1997.